



312066 0270 8096 1



*Office of Technical Assistance*  
**Executive Office of Environmental Affairs**  
**Commonwealth of Massachusetts**

# **Toxics Use Reduction Case Study**

## **SOLVENT USE REDUCTION AT KILMARTIN TOOL COMPANY**

### **SUMMARY**

The Kilmartin Tool Company devised a very simply yet highly effective method for minimizing CFC losses. The company decided to seal its CFC in air-tight containers between uses, thus preventing evaporative losses to the atmosphere. This change permitted Kilmartin to cut its use of ozone-depleting CFCs by more than 80%, while saving approximately \$5,000 per year in CFC purchase costs.

### **BACKGROUND**

The 110-employee Kilmartin Tool Company of southeastern Massachusetts is the largest manufacturer of coins and tokens in the United States. Roughly six times each year, Kilmartin cleans its coining dies in a chlorofluorocarbon (CFC) degreasing solution.

Each time the degreasing process is performed, the tank is heated in order to boil the CFC solution. The liquid vaporizes, rises in the tank and is condensed by cooling coils that surround the tank walls. The coining dies are cleaned by dipping them into the vapor inside the tank. When this is done, the CFC solution condenses on the dies, pulls the soils and grease from them, and drips back into the tank.

Before Kilmartin began to investigate opportunities for Toxics Use Reduction, the firm attempted to minimize CFC evaporation by turning off the tank heater and covering the tank with a lid after each degreasing job. Kilmartin's cleaning operation was using approximately 300 gallons of CFC each year. Due to the rising costs of CFCs and their adverse impact on stratospheric ozone, the company sought ways to reduce its CFC use.

### **TOXICS USE REDUCTION MODIFICATIONS**

Kilmartin knew that most of the CFC it used was being lost to evaporation. Given this, Kilmartin's process engineer designed a very simple solution. The company decided to seal its CFC in air-tight containers between uses. Since the degreasing tank could not be sealed easily, Kilmartin chose to pump the CFC from the tank into a 55-gallon drum (See Figure 1). Once sealed, the drums prevented all further evaporative loss to the atmosphere.

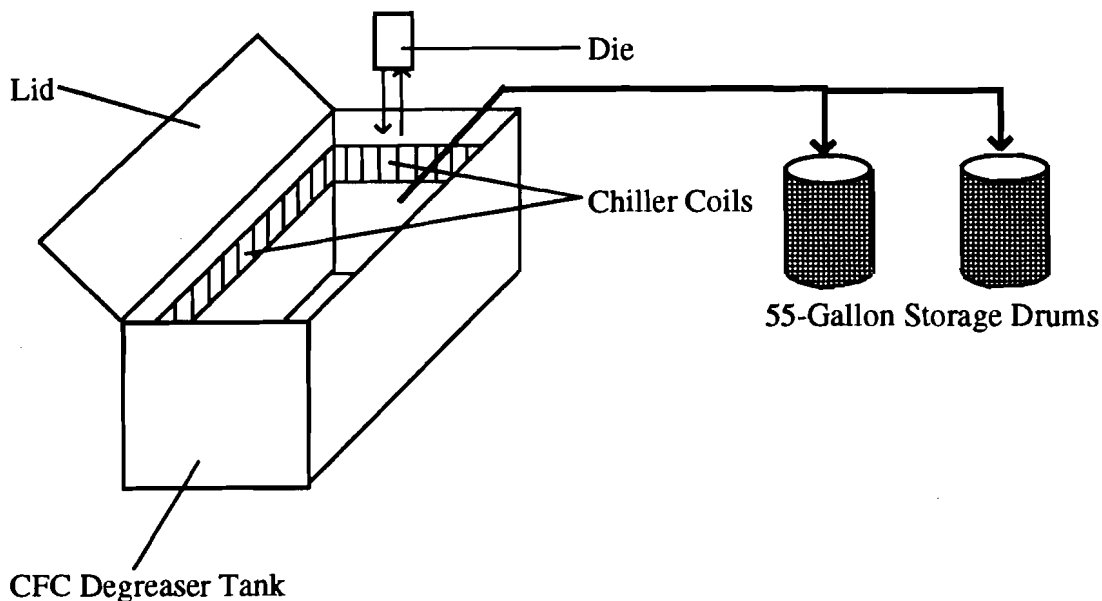


## RESULTS

**Reductions Achieved:** Kilmartin's CFC usage dropped from 300 gallons per year to 50 gallons per year -- a reduction of more than 80 percent.

**Economics:** Kilmartin's monetary savings were equally dramatic; the firm's CFC purchase costs dropped from \$6,000 to \$1,000 per year.

*Figure 1: Kilmartin's Modified Degreasing Process:*



*This Case Study is one of a series of such documents prepared by the Office of Technical Assistance (OTA), a branch of the Massachusetts Executive Office of Environmental Affairs whose mission is to assist industry in reducing the use of toxic chemicals and/or the generation of toxic manufacturing byproducts. OTA's non-regulatory services are available at no charge to Massachusetts businesses and institutions that use toxics. For further information about this or other case studies, or about OTA's technical services, contact: Office of Technical Assistance, Executive Office of Environmental Affairs, 100 Cambridge Street, Boston, Massachusetts 02202, or phone OTA at (617) 727-3260.*